

Remarks to the Office Action



**REMARKS TO THE FIRST OFFICE ACTION OF THE UNITED STATES PATENT
AND TRADEMARK OFFICE RELATED TO THE PATENT APPLICATION NO.
10/563,812 ENTITLED "MATTRESS WITH INDEPENDENT AND DETACHABLE
PARTS", DATE DECEMBER 17, 2007**

1.- In relation to the Application document please, find attached to this remarks amended pages 1-7 of specification, 8-9 of claims and 10 of abstract. Please, cancel page 11. This is the clean specification. Also, to comply with the patent rules, and to facilitate the examining process, there is attached the specification, claims and abstract showing addition and deletion of text.

The amended claims have been written in a more concise way, eliminating those aspects like procedures or advantages and limiting their contents to what is reflected in the application specification regarding to the mattress.

Regarding point 2 of the Examiner communication, find also attached the Information Disclosure Statement along with copies each cited foreign patent.

2.- Regarding point 3 of the Examiner communication, where the abstract is objected to because it exceeds the 150 words maximum, the applicant submits an amended abstract, page 10, with 132 words.

3.- Regarding point 4 of the Examiner communication, where a different arrangement of the specification is suggested by the Examiner, the applicant accepts those suggestions and consequently the proposed section headings have been amended in pages 1-7 of the specification, 8-9 of claims and 10 of abstract.

Also, the disclosure is objected to because several informalities. These informalities have been amended in page 5.

4.- Regarding point 5 of the Examiner communication, where the trademark VELCRO is used in the application in lowercase letters and in view of the Examiner comment "every effort made to prevent their use...", the applicant has eliminated this term along the specification, claims and abstract, replacing it with the expression "hook and loop fasteners".

5.- Regarding point 6 of the Examiner communication, where claims are objected to because each element or step of the claim should be separated by a line indentation, the applicant has applied this format were applicable, i. e. to the amended claim 1.

6.- Regarding point 7 of the Examiner communication, where Claim 1 is objected to because there is a period in line 15, the applicant has worded amended Claim 1, which does not include this period.

7.- Regarding point 8 of the Examiner communication, where Claim 3 is objected because two informalities in lines 12 and 19, Claim 3 has been canceled.

8.- According to point 9 of the Examiner communication, claims 1-6 are rejected under 35 U.S.C.112, second paragraph as being indefinite. In particular, Claims 1 and 3 recite the term "Velcro type or similar" rendering the claims indefinite. The applicant has refined said claims eliminating such expressions. In fact, the term Velcro has been replaced as explained above in point 4, and the terms type or similar have been omitted from the amended claims.

Claims 2, 3 and 4 have been cancelled, but their essential content has been included in the amended claim 1. For this reason, when one of these claims is objected to because of that content, the applicant will defend it, if interested in maintaining the same, in the point where the Examiner deals with it.

In the case of Claim 2 the phrase "any other type" renders the claim indefinite. Claim 2 has been canceled. Also, claim 2 recites a broad limitation "elastic material" and a narrower statement limitation "preferably latex". The amended claim 1 recites only "natural o synthetic latex materials" expression supported on page 3, lines 22-23 of the disclosure.

In the case of Claim 4 the phrase "or other types" renders the claim indefinite. Claim 4 has been canceled.

In the case of Claim 5 the phrase "other elements" renders the claim indefinite. This phrase has been omitted in the amended Claim 5.

9.- With respect to point 10 of the Examiner communication where claims 4 and 5 are rejected under 35 U.S.C.112, second paragraph because they recite the limitation "it", this term has been omitted in the amended claim 5 and claim 4 has been canceled.

10.- Regarding point 11 of the Examiner communication, where Claim 6 are rejected under 35 U.S.C.112, second paragraph, because it recites the limitation "the bed" for which there is insufficient antecedent, the applicant has replaced the expression "a mattress that avoid children falling off the bed" with "a barrier is made up along said edge areas" in the claim. This expression is supported on page 4, lines 15-18 of the specification.

11.- In reference now to point 12 of the Examiner communication, where claims are rejected under 35 U.S.C.112, second paragraph, because they are narrative and indefinite and replete with grammatical errors, the applicant has worded every claim to bring them in conformity with current U.S. practice, eliminating numeric references, indefinite terms and errors. Note that not any new subject-matter has been introduced in the amended claims.

12.- In reference now to point 13 of the Examiner communication, where claims 1 and 3 are rejected under 35 U.S.C.112, second paragraph, because they contain the trademark/trade name VELCRO, this term has been replaced as explained above in point 4.

13.- Point 14 of the Examiner communication states that Claims 1 and 3-6 do not meet the requirements of 35 U.S.C. 102(b) because they were anticipated by Bridley, US Patent No. 5,581,832.

Regarding Claim 1, the Examiner states that Bridley discloses a mattress with the same composition as that of the present application. The applicant disagrees with this assertion because:

- a) Bridley discloses an enfant support, whereas the application mattress is applicable to people of any age, healthy or ill, submitted to surgery, handicapped or in any other condition.
- b) Bridley discloses an enfant support to limit enfant movement from laying on its side (col. 2, lines 2-4), while the application mattress adjusts pressures, supports, etc., without any limitations to movements of the resting person.
- c) Bridley discloses an enfant support where the adjustment means are positioned: the abdominal support at a fixed position (col. 2, lin. 36-37), and the back support at a selected distance (col. 2, lin. 44-45), while the application mattress is configured in free way using variable positioning, variable shapes, variable resiliencies and assembling support parts on predetermined positions or not. In few words, a mattress adequate to a particular body needs without any restriction.
- d) Bridley discloses an enfant support where the enfant is positioned between an abdominal support and a back support, being this supports the “independent and detachable parts” of the Bridley’s invention. The application mattress supports a human body of any age on the independent and detachable parts.

In summary, the applicant deems that the novel feature which constitutes the essence of the invention is expressed in Claim 1 “said selection and said placement of said independent and detachable parts on said base, a mattress adapted for resting on a particular body is formed”, that is, a mattress configurable according to the needs of a particular body resting on it. This is supported, for example, on page 6, lines 29-31 and page 3, lines 26-31 of the specification.

In the amended claim 1, the listing order of components have been altered between base and independent parts because, in the paragraph regarding to the base, a reference is made to the independent part that for this reason are firstly mentioned.

Regarding to Claim 3, the Examiner states that in Bridley “a plurality of continuous or separated fabric ...(30 and 32)...allows placing said independent and detachable parts... in whatever position of said upper surface of said base”. As mentioned before, claim 3 has been cancelled, but since its essential content is included in the amended claim 1, some arguments against this statement follow. The

applicant is in disagreement with this assertion because the adjustment means of Bridley are positioned: the abdominal support at a fixed position (col. 2, lin. 36-37), and the back support at a selected distance (col. 2, lin. 44-45). Also, in column 4, lines 1-17 of Bridley's specification three, spaced apart, hook and loop fastener strips (30, 34) are mentioned twice. If they are positioned spaced apart, the strips do not form, at least, a continuous sheet as claimed in the application.

On the other hand, the Examiner statement "each of said sheets of auto adherent complementary fabric being the same dimension as said lower surface of the independent and detachable part" applied to Bridley's invention, is not correct in the applicant opinion because in Figures 1-7 there are three strips attached to the base of the abdominal and back supports covering a little portion of these bases.

Regarding claim 4, the Examiner states that Bridley discloses an outer cover provided with side fasteners. Claim 4 has been cancelled, but since its essential content is included in the amended claim 1, some arguments against this statement follow. According to paragraphs col. 3, lines 11-15, col. 4, lines 35-38 and Figures 5-6, the back and abdominal supports features individual covers. The mattress of the application may have an outer cover including all components inside.

Regarding claim 5, the Examiner states that Bridley discloses that the enfant support can be used by means of adequate choice of dimensions and shapes, as cushion, seat, etc. for resting an adult or child's body, according to col. 2, lines 1-5 and Figures 1-7. The applicant disagrees with this opinion because: a) Bridley, in the cited reference, only refers to infants of different sizes, and not to other bodies, and b) it seems difficult to use the constraining supports and the base member of Bridley as cushion, seat, armrest, etc. since it lacks of an uniform and continuous surface for resting the body, arm, leg, etc.

Regarding claim 6, the Examiner states that Bridley discloses "that by placing independent and detachable parts of greater height than the others in the areas of the edge of the mattress a mattress that avoids children of the bed is formed.... Note that... the independent parts would be capable of preventing children falling off a bed". Note that in the amended claim 6 such advantage has been omitted, now claiming "placing independent and detachable parts of greater height in edge areas of said

mattress, a barrier is made up along said edge areas". This change is supported on page 4, lines 15-17 of the description. The applicant concedes that the independent parts would be capable of preventing children falling off a bed, but disagrees with the first part of the Examiner's statement, since there are not detachable parts of greater heights than others. In fact, in Bradley's invention there are only two detachable parts and no other parts and additionally their dimensions are perfectly defined in column 4, lines 49-53 and on the other hand, these parts can not be positioned along the edges of the base but the abdominal support at a fixed position (col. 2, lin. 36-37), and the back support at a selected distance (col. 2, lin. 44-45).

14.- In reference now to point 15 of the Examiner communication, were claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bridley reference which discloses the independent parts being of a shape selected from prismatic... or any other type that can deform elastically when submitted to a load... the height of said independent and detachable parts being variable. Claim 2 has been cancelled, but since its essential content is included in the amended claim 1, some arguments against this statement follow. Note that the amended claim 1 only recites "said independent and detachable parts are selected from prismatic, cylindrical, and truncated conical or truncated pyramidal shapes and from natural or synthetic latex materials". This is supported on page 3, lines 18 and 22-23.

The applicant disagrees with the above mentioned features applied to Bridley's invention because the shapes of the parts are established in column 4, lines 49-53 and are rectangular with an inclined face and cylindrical, with respective heights of 4-5 inches and 3-4 inches (diameter).

Also, the Examiner states, "the Bridley reference fails to explicitly disclose the material of the independent parts". The applicant disagrees with this assertion because in column 4, lines 35-38, Bridley discloses explicitly which materials form the abdominal and back supports.

In view of the foregoing remarks, the applicant hereby respectfully requests reconsideration and prompt allowance of the claims.

Amended Specification, including Amended Claims (Red Line Version)

TITLE OF THE INVENTION

MATTRESS WITH INDEPENDENT AND DETACHABLE PARTS

CROSS REFERENCE TO RELATED APPLICATION (Not Applicable)

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STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT (Not Applicable)THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT (Not Applicable)

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INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (Not Applicable)15 BACKGROUND OF THE INVENTIONINVENTION PURPOSE Field of the Invention

20 This invention makes reference to a new type of mattress, which consists of a base, some joining means and a plurality of independent and elastic parts that are detachable and interchangeable to support the body.

INVENTION BACKGROUND Description of the Related Art

25 In today's market, there are numerous types of mattresses that guarantee the human body's enjoyment of a beneficial rest but also need to provide the function of a good support, being neither too soft nor too hard. The main varieties are the following:

- 30 - Wool Mattress: nowadays it's rarely produced due to the wool being replaced by new materials. This type of mattress has the disadvantage of the wool becoming matted with use, needing backcombing every two or three years to regain consistency. Furthermore, the professional mattress makers nowadays are very scarce.

- Spring Mattress: consisting of stainless steel springs, which can be bi-conical (the top and bottom hairsprings are larger than the main ones) or cylindrical (the hairsprings are equal in diameter), and are usually isolated to avoid any noises. On each side of the hairsprings the filling cavity carries a layer of horsehair, sisal or felt; followed by a layer of cotton, wool or synthetic fibres, which at the same time carries a sleeve, all closed together by a cover. These mattresses are comfortable and solid.
 - Synthetic Latex Mattress: the material is a chemical regeneration of natural latex. These mattresses have one flat surface and another surface full of cells that favour air circulation. They are very hygienic but deteriorate when exposed to daylight without their original cover.
 - Polyester Mattress: the density for the production of polyester should not be less than 25 kg/m³; the softness of the mattresses foam depends entirely of this density. Given that the rules are not always respected, this type of material has acquired an unmerited bad reputation. Before purchasing, the buyer should demand the specification of the density of foam utilized; good quality should also have a minimum of 10 cm.
- All the types of mattresses described before have the inconvenience that the main piece, the resting base is not detachable due to it being manufactured as a unique part; on the other hand, all of these mattresses offer a continuous flat surface on the area where the body is supported, however, no matter how elastic it is, it will never entirely adapt to the body.

DESCRIPTION BRIEF SUMMARY OF THE INVENTION

This invention consists of a mattress that is composed of a base and a variety of independent parts which are detachable from the base to support the body. The base is joined to such independent and detachable parts by means of detachable joints, specifically adherent fabric of a ~~Velcro~~ hook and loop fasteners type or similar, that allow such independent parts to be taken out, integrated or exchanged with different or similar ones and consequently substituted by new parts when these are damaged or in very bad condition.

The adherent fabric which is integrated to the base as a part of a joining means like ~~Velcro~~ hook and loop fasteners or similar, can cover the entire upper surface or can partially cover it when used as continuous or broken strips, although it should be noted that, for the purpose of the invention, such strips need to be placed in a quantity enough to be able to place the independent and detachable parts, whatever their shape or dimension, in any part of said upper surface of such base. The independent and detachable parts are provided with a corresponding and complimentary fabric on the bottom part to complete the joining means of ~~Velcro~~ hook and loop fasteners type or similar.

Apart from its use as a conventional resting element, this mattress is especially suitable for people during hospital treatment, particularly, for people that have suffered any type of fracture and/or injury that requires the patient to remain in bed or in the same position. Since the parts mentioned are detachable, the surface of the mattress under the fractured zone or injury can be endowed of independent parts and of any convenient shapes and reduced dimensions than the rest of the independent parts of the mattress with the sole purpose of not forcing the affected part of the patients body and therefore permitting the pressure of the mattress to be correct and allowing the recovery of the affected part. This includes, of course, the case in which an area of the mattress can have no pieces at all.

The base of the mattress can have any kind of shape and be fabricated of any kind of material, elastic or semi-rigid and its dimensions can be variable according to its use and finality. An appropriate use of these variables allows to adapt the setting-up of this mattress to fit adult people or even children, and by extension, can be applicable to the manufacturing of cushions, seats and backing including those of vehicles, armrests, footrests, pillows, etc.

The independent parts can be obtained by lengthways and transversely cuts of a traditional mattress or by means of an independent manufacture for each type of part; its form can be prismatic, cylindrical, conical or pyramidal trunk or any other type that can deform elastically when submitted to a perpendicular or slightly inclined load regarding the plan of the mattress base; its section can be square, circular, elliptical, polygonal or of any other form; its height can vary according to the needs of the user

or patient; the material composition of the parts will preferably be made out of natural or synthetic latex, even though any other adequate and elastic material can be used for the mattresses. Due to the simplicity of the mattresses design and the features of its independent and detachable parts, these can be assembled over the same base of
5 independent parts of different shapes, sections, heights and materials. This ultimately means that the disposition of the independent and detachable parts over the base of the mattress does not have to be on reticule files and parallel columns but instead in whichever form, depending on the placement of each part exclusively of the convenient placement at a given point depending on the needs of the body,
10 particularly of the body of hospitalised patients.

This type of mattress which is composed of independent parts favours the ventilation of the patient's body by circulating air, avoiding the multiple inconveniences of the classic mattresses. It also favours the cellular regeneration due to the massaging
15 provided by the plurality of the independent parts. It also avoids the formation of wounds produced by the friction between the skin and a hard surface.

The independent parts are separated by variable separations that can be controlled as desired without any limitation in dimension of such separations. This is due to being
20 the main objective of the invention to provide independent and detachable parts so they can be easily joined or extracted from the base at any given place. Such separations are chosen according to the needs of the user or the injury that would need to be treated; if necessary, some of the independent parts can be removed, for example, with certain wounds so they won't be in direct contact with the mattress.

25 When this mattress is used for children or babies, the independent parts are of a smaller size; the space of separation between them can avoid the well known suffocation produced by the mattress in contact with the respiratory tract of children due to the mattress being of great help for breathing. Parts with a greater height than
30 the ones mentioned before can also be provided in the areas of the edge of the mattress so these can act as a type of barrier to avoid children falling off the bed.

All of the parts of the mattress (base, independent parts, all of them with their corresponding elements to form the joining means) are capable, as mentioned before,
35 of being manufactured and commercialised at different times and places; they are all

interchangeable and any of them can be substituted or cleaned if they are deteriorated or dirty.

The mattress may or may not be covered. In the latter case, the cover can be provided of a lateral latch in all or in a few of the edges, such as a zipper, a pressure latch or similar, that would allow the easy access to its interior in order to extract, insert, interchange or alter the disposition of one or various of the independent and interchangeable parts.

10 BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

For a better comprehension of the invention, as an example, it is included a description of a practical execution of such invention by means of the following drawings:

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- Fig. 1 is a perspective view of a mattress in which all of the areas of the independent parts are identical and prismatic.

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- Fig. 2A is a partial side elevational view of a mattress where the invention is provided with identical pyramidal trunk parts that show the separation between one another.

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- Figures 2B and 2C are elevational views of two subsets of independent parts that are different in shape and dimension, suitable for placement on the edge of the mattress of a baby's crib that would avoid, with the baby's movement, injury by placing it's head between the bars of the crib.

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- Fig. 2D is a side elevational view of the mattress for a baby's crib, where it shows the disposition of the independent parts and some subsets which have been ~~showed~~ shown in Figs. 2B and 2C.

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- Fig. 3A is a side elevational view of a mattress, a cushion, a seat, a backrest, etc., in form of an arch, allowing the formed hollowness to adapt to any part of the body.

- Fig. 3B is an enlarged detail of Fig. 3A that allows us to observe the adaptability of the independent parts (4) due to the separation and shape of such parts.

- Fig. 4A is a side elevational view of a mattress, a cushion, a seat, a backrest, etc., in form of an arch, allowing the formed convexity to easily adapt to any surrounding area.

5 - Fig. 4B is an enlarged detail of Fig. 4A that allows us to observe the adaptability of the independent parts (4) with different surrounding areas.

10 - Fig. 5 is an elevational view of a mattress of the invention where we can observe the different distortion of the independent parts (4) that are in contact with the body of the person lying down.

PREFERRED EMBODIMENT DETAILED DESCRIPTION OF THE INVENTION

15 As a non limiting example, a description of a preferred embodiment of the mattress of the invention is hereinafter disclosed, out of the many possible embodiments pursuant to the contents of the previous description, that also includes not only mattresses but cushions, seats, and backrests including those of vehicles, armrests, footrests, pillows and other elements for the everyday rest of adult and children's bodies.

20 In the preferred embodiment shown in Fig. 1, the mattress (1) of the invention shows a base (3) of a parallelepiped shape, the flat upper side of which adheres by conventional known in the art, methods, to a continuous sheet or separate strips of auto adherent fabric of a ~~Velcro~~ hook and loop fasteners type or similar, which will completely cover the top surface of the base (3).

25 The ~~complimentary~~ complementary sheet of the ~~Velcro~~ hook and loop fasteners type or similar joining measure will adhere a plurality of independent parts (4), previously cut according to the size of each independent part (4). In this preferred embodiment, the independent parts (4) are equal in dimension and prismatic shape.

30 The independent parts (4), each provided with said complimentary sheet of ~~Velcro~~ hook and loop fasteners type or similar joining means, are arranged over the base (3) provided with a continuous sheet or separate strips of auto adherent fabric (2) of a ~~Velcro~~ hook and loop fasteners type or similar in a uniformed distribution according to

a reticule set of perpendicular columns and rows leaving a small and constant separation between the adjacent independent parts (4).

5 The mattress may or may not be covered (1). In the latter case, the cover will be provided of lateral latches in all or some of the sides, such as zippers, pressure latches or other types.

10 This will allow that such independent parts (4) can be individually extracted, inserted or changed by different or similar ones and consequently substituted by new ones when these are damaged or deteriorated.

15 It is clear that the invention described and accompanied of a preferred embodiment can be object of obvious variations for people who are experts in the matter as far as shapes, dimensions and materials used, these do not have to be viewed as modifications of the invention or of the following claims.

CLAIMS

1. (Currently Amended) A mattress ~~[[(1)]]~~ of independent and detachable parts, comprising:

5 - a base ~~(3)~~ which can have any kind of shape and dimension according to the mattress' use and finality that can be fabricated of any material, of an elastic or semi-rigid material having an upper surface joined to

- a continuous sheet made up of auto adherent fabric of hook and loop fasteners of the same dimensions as said upper surface; or

10 - a plurality of continuous or separated fabric of auto adherent strips of hook and loop fasteners adapted to allow positioning of said plurality of independent and detachable parts in whatever position of said upper surface of said base;

15 - a plurality of independent and detachable parts ~~(4)~~ that are placed on said base ~~(3)~~, said plurality of independent and detachable parts ~~(4)~~ placed on said base ~~(3)~~ being composed simultaneously by independent parts ~~(4)~~ of different shapes, different sections, different heights and of different materials and each of these independent and detachable parts ~~(4)~~ being separated by a distance from the detachable and independent part ~~(4)~~ adjacent to it each selected of a prismatic,
20 cylindrical, truncated conical, or truncated pyramidal shape; of a height; of a natural or synthetic latex material; and each part provided at the bottom with an auto adherent complementary fabric sheet of hook and loop fasteners;

25 - auto adherent joining means of a Velcro type or similar comprising said continuous sheet of auto adherent fabric, or said continuous or separated fabric of auto adherent strips of hook and loop fasteners and said complementary fabric sheet of hook and loop fasteners to detachably join in a detachable way said base ~~[(3)]~~ with said plurality of independent and detachable parts; ~~[(4)].~~

30 - an outer cover provided with fasteners, such as zippers, or pressure latches, in at least one side to allow said independent parts to be individually extracted, inserted, or changed;

wherein by means of said selection and said placement of said independent and detachable parts on said base, a mattress adapted for resting on a particular body is formed ~~the placement of said independent and detachable parts over the base (3) is free, the placement of each independent and detachable part (4) depending~~
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~~exclusively on the convenience of locating it in any given place according to the needs of the user's body, particularly hospitalised patients' bodies, and without any further restriction except that the portion of the base (3) over which each detachable part is placed (4) must be covered with said joining means (2).~~

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2. (Canceled).

3. (Canceled).

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4. (Canceled).

5. (Currently Amended) A mattress ~~[[(1)]]~~ of independent and detachable parts according to claim 1, characterized in that ~~it can be used by means of an adequate choice~~ said selection of shapes and dimensions of ~~its components~~ said base, said independent and detachable parts, said joining means, and said outer cover, is adapted as ~~[[a]]~~ cushion, ~~[[a]]~~ seat and ~~[[a]]~~ headrest including those of vehicles, ~~[[an]]~~ armrest, ~~[[a]]~~ footrest, ~~[[a]]~~ pillow ~~and other elements for the daily rest of~~ for an adult or child's body.

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6. (Currently Amended) A mattress ~~[[(1)]]~~ of independent and detachable parts according to claim 1, characterized in that by placing independent and detachable parts ~~[[(4)]]~~ of greater height than the others in ~~[[the]]~~ edge areas of ~~the edge of the mattress (1)~~ a said mattress, that avoids children falling off the bed is formed. a barrier is made up along said edge areas.

SUMMARY ABSTRACT OF THE DISCLOSURE

5 A ~~[[M]]~~mattress (1) composed of a base (3), and various independent and detachable parts (4) in form of blocks, and various joining means (2) consisting of adhesive fabrics of a ~~Velcro type or similar~~ hook and loop stripes that join the base (3) together with the independent and detachable (4) parts. [[

10 ~~]]_The base can be of any shape and material, flexible or semi-rigid and provided of different dimensions depending on each type of use._[[~~

15 ~~]]The independent parts (4) can be cut lengthways and transversely, like a traditional mattress and can have sections with different shapes and dimensions, therefore also having different heights. They are preferably manufactured in latex-even though other materials can be used that would favour its adaptability._[[~~

20 ~~]]The mattress (1) may be covered, in this case it would carry a fastener that would facilitate the insertion, extraction or change of position for the independent parts, this fastener can consist of a zipper, pressure latch or any other type that would permit an easy access to the cushion.~~

Form PTO 2038